Review of Limits – A Puzzle by David Pleacher

(Thanks to Andrew Lorber for correcting an error in the puzzle)

Directions: Solve each of the 17 problems on limits:

MATCHING

_____ 1. $\lim_{x\to\infty}\frac{6-7x}{x+3}=$

_____ 2. $\lim_{x\to 5}4=$

_____ 3. $\lim_{x\to 1}\frac{x^2-1}{x-1}=$

_____ 4. $\lim_{x\to 0}\frac{x^2+3x}{x}=$

_____ 5. $\lim_{x\to 3}\frac{x^3+27}{x+3}=$

_____ 6. $\lim_{x\to a}\frac{3}{x}=$

_____ 7. $\lim_{x\to\infty}\frac{1}{x}=$

_____ 8. $\lim_{x\to 0}\frac{4}{x^2}=$

_____ 9. $\lim_{x\to\infty}(-6-\frac{3}{x^2})=$

_____ 10. $\lim_{x\to 0}\frac{8x-8}{x-1}=$

_____ 11. if $f(x)=2x^2$, find $\lim_{h\to 0}\frac{f(x+h)-f(x)}{h}=$

_____ 12. $\lim_{x\to\infty}\frac{7x-7}{x-1}=$

None of the answers below:	WHERE
4x	AND
$\frac{3}{a}$	BE
– 11	WATCH
– 9	THREE
– 7	GROUPS
– 6	PEOPLE
– 1	WATCHES
0	HAPPENED
2	MAKE
3	THINGS
4	THOSE

MATCHING

_____ 13. $\lim_{x\to -3}\frac{x^3+27}{x+3}=$

_____ 14. $\lim_{x\to 1}\frac{5x-5}{x-1}=$

_____ 15. $\lim_{x\to 1}\frac{5x^2+x}{x}=$

_____ 16. $\lim_{x\to -1}(-2x^2+5x-2)=$

_____ 17. $\lim_{x\to -4}\frac{3x^2+13x+4}{x+4}=$

5	WHAT
6	CAN
7	DIVIDED
8	HAPPEN
9	WONDER
27	INTO
35	WHY
∞	WHO

NOW, Decode the secret message by placing the corresponding word for each problem number in the blank spaces below:

_____	_____	_____	_____	_____	_____	_____
9	15	6	12	13	16	1
_____	_____	_____	_____	_____		
2	8	3	4	10		
_____	_____	_____	_____	_____		
2	8	17	4	10		
_____	_____	_____	_____	_____	_____	
11	2	8	5	14	7	